15. Distinguish between CPM and PERT.

16. Describe the various techniques of inventory control.

SECTION C — (1 × 20 = 20 marks)
Compulsory.

17. Data relevant to a particular project are given below:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Duration (days)</th>
<th>Manpower required (number)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 – 2</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>1 – 3</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>1 – 5</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>2 – 5</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>3 – 4</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>3 – 5</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>4 – 5</td>
<td>Nil</td>
<td>Nil</td>
</tr>
</tbody>
</table>

(a) Draw the network and show the critical path.
(b) Show the manpower profiles based on the Early Start as well as Late start schedules on a squared network.

4

MBA 09 R

M.B.A. DEGREE EXAMINATION, JUNE 2013.
Second Semester
General, Finance, Marketing, HRM, IB, RM, Tourism

OPERATIONS MANAGEMENT
(2012 – 13 Batch onwards)

Time: Three hours        Maximum: 100 marks

SECTION A — (5 × 6 = 30 marks)

Answer any FIVE questions.

All questions carry equal marks.

1. Explain the significance of Operations Management in recent days.

2. What are the types of plant Lay-outs?

3. State the stages of development of operations research.

4. What are the limitations of operations research?

5. What are the uses of transportation problem?

6. Explain the need for inventory control.
1.4 An insurance company has three claim adjusters. How many hours a week can an adjuster expect to spend with claimants?

2. An exponential distribution with mean service time 10 minutes. Claimants are found to have an exponential distribution with mean service time 40 minutes. The average rate is 12 per hour. The claims are found to arrive in a Poisson fashion. The company is found to arrive in a Poisson fashion. What is the best strategy for the company as well?

10 II 20 12
9 I 6
8 II 11
7 I

II. The company and the competitor in the long run?

1.1 Determine the weekly production schedule of 300, 700, 900, and 80 units of the item which must cost Rs. 15 per unit. For the last week, the weekly demands are the same as the first 2 weeks and 10% for the next 4 weeks so as to minimize the total cost. Given that production cost of the current item for the next 4 weeks is Rs. 100.

\[ x_1 + x_2 \leq 10 \]
\[ 12x_1 + 7x_2 \leq 35 \]
\[ 3x_1 + 8x_2 \leq 44 \]
\[ x_1, x_2 \geq 0 \]

Subject to the constraints: Maximize 5x_1 + 7x_2

10. Discuss the various applications of operations research in business decision making.

9. Describe the various factors involved in the location of a plant, with an emphasis on a company.

All questions carry equal marks.

SECTIONS B — (6 × 10 = 60 marks)

8. Define waiting time. Give a brief description of the various types of queues.

7. What are the assumptions made in theory of